

4. Observations made at Altona.

These observations are made with the meridian circle. I have put a small micrometer in the field of the telescope, which requires no illumination.

	d	h	m	s	°	'	"	°	'	"
March 12*	10	27	10		147	24	51	+41	47	33
13	10	16	25		145	42	0	40	17	37
14†	10	5	54		144	2	33	38	43	37
15‡	9	55	36		142	26	34	37	5	44

March 16. The sky was covered.

March 18. I have to-day received a letter from Mr. Encke, which gives some more observations of the comet, recently observed at Naples.

	Berlin Mean Time.				Right Ascension.			Declination.		
March	d	h	m	s	°	'	"	°	'	"
5	7	55	28.1		53	57	7.4	-9	48	36.6
8	7	30	39.6		55	29	47.4	-8	43	45.9
9	7	52	29.4		56	0	38.8	-8	22	11.4

From the observations, Feb. 7, Feb. 25, and March 5, he has calculated the following elements,—

Perihelion Passage, 1844, December 13.84846, Berlin Mean Time.

Perihelion	295	45	41.7	} Mean equinox, Jan. 0.
Ω	118	21	6.6	
Inclination	45	37	50.4	
Log. q	9.395670.	Motion direct.		

The middle observation is represented to -26.6 in R.A. } Calcul.—observ.
 $+14.3$ in decl. }

Since March 9, Mr. Encke has not seen this comet, even with his powerful telescope.

III. Elements of De Vico's Second Comet by the pupils of the Observatory at Naples, extracted from a letter to the Astronomer Royal, from E. Cooper, Esq. Communicated by the Astronomer Royal.

Perihelion Passage, 1845, April 21.398, Mean Time, Naples.

Longitude of perihelion	194	22	20
Longitude of ascending node.....	347	31	30
Inclination	55	10	34
Perihelion distance	1.23018	Motion direct.	

IV. Observations of the great Comet of 1844-5, made at the Observatory of Trevandrum, by J. Caldecott, Esq., Director of the Observatory. Communicated in a letter to the Secretary.

* The great cold (-14° Réaum.) and the east wind made the comet and stars tremulous.

† Good observations: the nucleus visible.

‡ Still better observations. The nucleus very distinct, of about $15''$ diameter.

“Trevandrum Observatory, 6th February, 1845.

“Dear Sir,—I have the pleasure to send you, for the information of the Royal Astronomical Society, a list of observations which I have taken of a comet which was first seen at this observatory on the 30th of December, at 7 P.M. On that evening it was very bright for the short time it was seen before being covered by clouds, and must have evidently been conspicuous for several evenings earlier at places having a clear sky: here a cloudy state of the atmosphere prevailed for some days before and after that date; and it was not until the 8th of January that I was able to obtain observations of it. Since then I have observed it (in sets of 4 or 6 observations) nearly every evening with the 7-foot equatoreal of this observatory, fitted with a reticulated micrometer of gold wire. The instrumental corrections have been obtained principally by observations of α *Gruis* at about the same hour-angle; and as the instrument (mounted on pillars of granite) is very permanent in its adjustments, I consider all the observations (except those for the last three or four days) may be depended on to within 1^s of R.A. and $10''$ of declination. They are corrected for refraction.

“From the observations of the 9th, 14th, and 19th of January, I have calculated roughly (*i. e.* without correcting the observations for parallax and aberration) the approximate parabolic elements as follows:—

	Trevandrum Mean Time.
Time of perihelion passage, December	13.5606
Logarithm of perihelion distance	9.4325438 ($q=0.270735$)
Longitude of perihelion (on the orbit)	$298^{\circ} 51' 28''$
Longitude of the ascending node	$118^{\circ} 31' 35''$
Inclination	$45^{\circ} 33' 46''$
Motion direct.	

“The comet, when first observed, had a very distinct nucleus, resembling a star of the fifth magnitude, seen through a thin haze. The tail on the 9th of January I ascertained, by measurement with a sextant, to be about 7° long and $1\frac{1}{4}^{\circ}$ broad, at its broadest part, which was at about $\frac{1}{3}$ of its length from the nucleus. After that date it gradually diminished in length and brightness, both by reason of its own diminishing light and of the increasing moonlight, and for the last week the whole has disappeared to the naked eye; the head is, however, still seen in the telescope as a blotch of light, which will scarcely bear the least illumination of the field (even through a red glass) for observation.—I am, &c.

“JOHN CALDECOTT.”

Places of the Comet of 1844-5.

Date. 1845.	R.A.	N.P.D.	Remarks.
Jan. 8 ^d 29650	^h 22 ^m 42 ^s 58.54	^o 134 ['] 29 ["] 41	The instrumental corrections were obtained nearly every day by observations of α Gruis in the afternoon.
9 29491	22 54 57.26	134 11 28	
10 29780	23 6 37.40	133 51 1	
11 28721	23 17 53.14	133 25 6	
12 28729	23 28 57.18	132 55 13	
13. Observations prevented by clouds.			
14 28895	23 49 57.38	131 45 28	
15 29545	23 59 57.59	131 6 11	
16 30384	0 9 28.71	130 24 23	
17 29724	0 18 40.30	129 41 5	
18 29307	0 27 26.00	128 56 13	
19 29585	0 35 50.36	128 9 16	
20 29177	0 43 50.76	127 21 32	
21 31826	0 51 44.16	126 31 46	
22 29709	0 58 56.80	125 44 10	
23 29344	1 5 57.00	124 55 17	
24. Observations prevented by rain.			
25 30090	1 19 12.0	123 16 0	Comet very faint. One observation only.
26 29747	1 25 20.2	122 26 41	
27 30638	1 31 21.8	121 37 6	
28 30539	1 37 01.0	120 48 53	
29 31184	1 42 27.8	120 0 23	
30 29529	1 47 36.2	119 13 5	
31. Observations prevented by clouds and rain.			
Feb. 1 36330	1 57 49.4	117 36 50	Comet very faint, and observations very difficult.
2. Observations prevented by clouds.			
3 33561	2 6 36.2	116 8 44	
4 32288	2 11 3.6	115 24 57	
5 32020	2 15 13.0	114 41 30	

Notes.

- Jan. 8. Nucleus distinct, and like a star of the 5th magnitude.
9. A star of the 7th magnitude in field with comet, $4\frac{3}{4}$ squares* to the apparent south (real north), and preceding comet by 18^s.2.
The Tail measures 7° long, $1\frac{1}{4}$ ° broad.

* One square of this micrometer is = 3' 50".8 of arc.

- Jan. 12. A small star, 8th magnitude, precedes comet 18^s, and from 5'' to 10'' to apparent south of it.
 14. A star, 7th magnitude, not quite 1 square to apparent south, preceding comet 6^m 11^s.
 18. A star, 7th magnitude, in field with comet, preceding it 21^s, and 1 square to apparent south.
 25. A star, 6th magnitude and of red colour in field with comet, 1 $\frac{3}{4}$ squares to apparent north, and following it 23^s·7.
 28. A green field found favourable to vision of the comet and wires.
 30. A red field, still better.
 Feb. 4. Observations very difficult.
 5. Ditto ditto.

V. Observations of Mauvais' second Comet (3d series), made at the Royal Observatory, Cape of Good Hope, under the direction of T. Maclear, Esq. Communicated by the Astronomer Royal.

Day.	Star of Comparison.	Cape Mean Time for Right Ascension.	Difference of R. A. of Comet and Star.	No. of Obs.	Cape Mean Time for Declination.	Difference of Declination of Comet and Star.	No. of Obs.
1844. Dec. 2	23	h m s 14 38 29·0	m s — 2 3·48	12	h m s 14 38 29·0	' '' — 2 37·0	12
4	24	14 12 24·2	+ 0 19·38	6	14 23 35·2	— 19 33·8	10
		14 37 23·3	+ 0 10·51	6			
	25	14 47 34·2	— 0 35·21	10			
5	26	14 12 5·5	+ 2 20·86	14	14 12 5·5	+ 7 42·7	14
7	27	13 34 40·9	+ 1 5·35	10	13 34 40·9	+ 2 8·7	10
	28	13 53 9·7	— 0 7·45	6	14 1 45·7	+ 5 23·9	8
8	29	13 11 55·3	— 0 15·24	10	13 24 39·7	+ 0 44·4	10
		13 34 22·3	— 0 4·33	7			
12	30	11 58 38·6	+ 1 1·27	3	11 58 38·6	— 22 19·2	3
13	31	10 56 28·8	+ 1 38·82	5	11 8 46·8	+ 0 28·9	10
		11 29 3·9	+ 1 16·14	8			
15	32	9 38 10·3	— 2 6·71	10	9 38 10·3	+ 1 9·8	10
		10 27 7·0	— 2 45·04	10	10 27 7·0	+ 1 54·0	10
16	33	9 39 42·3	— 0 26·44	10	9 56 49·3	+ 1 1·9	10
		10 12 52·2	+ 0 0·69	14			
18	34	9 31 8·2	— 2 18·45	8	9 31 8·2	+ 3 47·4	8

The sign + denotes the comet's right ascension or declination to be greater than the star's; the sign — the contrary.

The above observations were made with a spider-line position micrometer applied to Dollond's 46-inch achromatic, and with a power of 43.